

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

THE GENUS HEDYSARUM IN THE ROCKY
MOUNTAINS.

BY AVEN NELSON.

Most of the material that has been collected in the genus *Hedysarum* in the Rocky Mountain Region has found its way into the herbaria either as *H. boreale* or *H. Mackenzii*. More recently some of it is appearing under other names. Of the numerous collections made by the writer some have been distributed under the foregoing names, but always with the feeling that a careful study of ample material would show that material so distributed usually represented an aggregate. For the sake of light on this point careful study of the literature and the specimens at hand has been made with the following conclusions respecting all the species heretofore attributed to this region.

Hedysarum Americanum (Michx.) Britt.

Hedysarum alpinum Americanum Michx. Fl. 2:74; Pursh, Fl. 2:484. *H. boreale* Nutt. in D. C. Prodr. 2:343, in part; Hook. Fl. Bor. Am. 1:155, in part; and later authors in part. Not *H. boreale* Nutt. Gen. 2:110.

It does not seem to me that there is sufficient evidence to show that the plants of Michaux "In borealibus Canadae et in cataractis montium Alleghanis" and those of Nuttall "In arid and denudated soils around Fort Mandan on the banks of the Missouri" are the same species. In

fact the descriptions do not tally very closely and Nuttall merely suggests the possibility. The two habitats are so wholly different as to suggest in themselves the distinctness of the plants.

Hedysarum boreale Nutt.

Hedysarum boreale Nutt. Gen. 2:110; and of many later authors in part. See citations and the note on the preceding.

When the proper locality shall have been visited, Nuttall's subvillous species with its obovate leaflets and round articulation in the loment will probably be found again.

Hedysarum cinerascens Rydb.

Hedysarum cinerascens Rydb. Mem. N. Y. Bot. Gard. 1:257. *H. canescens* Nutt. T. & G. Fl. N. Am. 1:358.

This species is not of frequent occurrence, but is occasionally found in typical form from central Wyoming, northward and westward. The cinereous pubescence throughout, the small stipules and the short corolla-wings are distinctive.

Hedysarum lancifolium Rydb.

Hedysarum lancifolium Rydb. Mem. N. Y. Bot. Gard. 1:256.

No specimen of this is at hand, but judging by the description it is an excellent species. Known only from the original locality, "Head water of Jocko River, Mont., 1883, Canby, 93."

Hedysarum marginatum Greene.

Hedysarum marginatum Greene, Pitt. 138. 1900.

Of this species the description is not just now at hand but judging by a specimen of the type number (Pagosa Springs, Colo., Baker, 1899) it is strongly marked. Presumably that is still the only collection of it.

Hedysarum Mackenzii Rich.

Hedysarum Mackenzii Rich. Frankl. Jour. 745.

It is usual to call the commonest form of *Hedysarum* in the Rocky Mountains by this name in spite of the fact that it does not at all closely

accord with the original description. It seems highly probable that no true *H. Mackenzii* occurs within the United States, at least no specimens have come under my observation with leaves that are "canescently hairy on both sides," or "utrinque canescenti-pilosis," and with the joints of the legume "rugose and pilose." The original specimens from "Barren grounds, north of Lat. 64, as far as the shores of the Arctic Sea" must have been very different. The Rocky Mountain plant may be named as follows:

***Hedysarum pabulare* n. sp.**

Stems several from the crown of a woody root, decumbent at base and moderately slender, 4-7 dm. long, subcinereous and obscurely striate; leaves petioled, 5-10 cm. long; leaflets 9-15, from narrowly to broadly oblong or rarely on some of the lower leaves obovate and emarginate, 1-2 cm. long, subcinereous with a minute pubescence below, green, glabrate and minutely puncticulose above; stipules rather small, more or less united, with linear acuminations as long as the body; racemes long, on axillary peduncles surpassing the leaves, its flowers tardily or not at all reflexed; calyx-tube short (about 2 mm.), its teeth linear-acuminate and 3-4 mm. long; corolla lilac or light purple; its standard 12-13 mm. long, broadly obovate, emarginate; the keel obovate-cuneate, equaling the standard and about one-fourth longer than the narrowly oblong wings; joints of the loment, 3-5, suborbicular, 5-7 mm. broad, usually closely united or confluent, more rarely with a narrow canescent connective, the transverse nerves (scarcely reticulate) ending in a thickened margin, light green and appearing glabrous, but sparsely puberulent under a lens.

This species is reputed an excellent forage plant. As previously stated it has often figured as *H. Mackenzii*. The following collections seem to me to be representative of it. Wyoming: 752, Wind River, 1894; 1087, Snake River, 1894; 201, Bates Creek, 1901, by L. N. Goodding. Colorado: Durango, 1898, by C. S. Crandall; 83, Mancos, 1898, by Baker, Earle and Tracy. Utah: 5592, Soldier Summit, 1894, by M. E. Jones.

***Hedysarum philoscia* n. sp.**

Bright green and nearly glabrous throughout; stems slender, 4-7 dm. high, few to several from a freely branched semi-fleshy root; leaves crowded, short petioled, with lanceolate membranous semiconnate stipules: leaflets 15-23, mostly oblong (15-30 mm. long and 7-12 mm. broad), obtuse with a minute mucro, some minute straggling hairs below, especially on the midrib; peduncles axillary, slender, overtopping the leaves; raceme slender, puberulent, acuminate; flowers white, sharply reflexed in bud, rising somewhat in anthesis; bracts filiform; calyx-tube campanulate, with triangular-lanceolate teeth shorter than the tube; corolla narrow,

the standard shorter than the narrow keel; the wings linear, with a narrow basal lobe equaling the claw; legume glabrate, mostly three jointed; the joints oval to orbicular, 6–8 mm. long, lightly reticulate from a somewhat larger marginal nerve.

Only two collections of this species are at hand, both of them from rich moist coves on stream banks in the Laramie Mountains of Albany Co., Wyoming. Nos. 2034, Crow Creek, 1896; 3367, Willow Creek, 1897.

Hedysarum sulphurescens Rydb.

Hedysarum sulphurescens Rydb. Bull. Torrey Club 24:253: *H. flavescens* Coult. & Fish. Bot. Gaz. 18:300; not Regel & Schm.

This fine species is of frequent occurrence in northwestern Wyoming, and through Montana.

Hedysarum uintahense n. sp.

Green and apparently glabrous throughout, but under a lens sparsely and minutely pubescent: stems stoutish, noticeably striate, mostly erect, the short lower nodes sheathed by the large brown connate stipules; leaves nearly sessile, large, 10–15 cm. long; leaflets 11–23, variable in shape (oval, ovate or even nearly lanceolate), mostly obtuse, 1–3 cm. long; stipules large, semiconnate, brownish, membranous; racemes axillary, in the uppermost approximated nodes appearing clustered, corymbose, or even umbellate, surpassing the leaves; the purple or lavender flowers strongly reflexed from the earliest anthesis; calyx-tube nearly glabrous, campanulate, with oblique margin and short unequal teeth (tube 4 mm. long and teeth usually much less than half as long); corolla large, 15 mm. or more long; the keel surpassing the subequal standard and wings; the wings broadly linear, with a slender claw and a free lobe as long as the claw; loment stipitate, its 2–5 large joints often with a canescent connective; the joints obscurely puberulent, lightly reticulated, narrowly margined, oval to obovate or oblong, 10–15 mm. long.

I cite as type my No. 7198 from the moist draws in the Uinta foot-hills, Evanston, Wyo. This species has been variously treated heretofore but most specimens are probably labelled *H. boreale*. The following I think belong here. Wyoming: My Nos. 877 and 3839; B. C. Buffum's from South Fork, Crazy Woman Creek, 1892; 977, Merrill and Wilcox, Teton Pass, 1901. Washington: 1850, L. H. Henderson, Olympic Mountains. Colorado: 464, Baker, Earle and Tracy, near La Plata. The last two are given with some reserve.